

Serial Number: 09/846,808

ENTERED

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☒ Other: *Seq 7 - corrected amino acid nos.*

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,808

DATE: 05/27/2001

TIME: 16:38:42

Input Set : A:\Pto.amc

Output Set: C:\CRF3\05272001\I846808.raw

3 <110> APPLICANT: Walker, David H.
 4 Yu, Xu-Jie
 6 <120> TITLE OF INVENTION: Ehrlichia chaffeensis 28 kDa Outer Membrane
 7 Protein Multigene Family
 9 <130> FILE REFERENCE: D6311
 W--> 11 <140> CURRENT APPLICATION NUMBER: US/09/846,808
 11 <141> CURRENT FILING DATE: 2001-05-01
 13 <150> PRIOR APPLICATION NUMBER: 60/201,035
 14 <151> PRIOR FILING DATE: 2000-05-01
 16 <160> NUMBER OF SEQ ID NOS: 53
 18 <210> SEQ ID NO: 1
 19 <211> LENGTH: 284
 20 <212> TYPE: PRT
 21 <213> ORGANISM: Ehrlichia chaffeensis
 23 <220> FEATURE:
 24 <223> OTHER INFORMATION: P28-1 Outer Membrane Protein of
 25 Ehrlichia chaffeensis
 27 <400> SEQUENCE: 1
 29 Met Ser Lys Arg Ser Asn Arg Lys Phe Val Leu Trp Val Met Leu
 30 5 10 15
 32 Ile Leu Phe Thr Pro His Ile Ser Leu Ala Ser Val Leu Asn Asp
 33 20 25 30
 35 His Asn Ser Met Tyr Val Gly Ile Gln Tyr Lys Pro Ala Arg Gln
 36 35 40 45
 38 His Leu Ser Lys Leu Leu Ile Lys Glu Ser Ala Ala Asn Thr Val
 39 50 55 60
 41 Glu Val Phe Gly Leu Lys Lys Asp Leu Leu Asn Asp Leu Leu Thr
 42 65 70 75
 44 Gly Ile Lys Asp Asn Thr Asn Phe Asn Ile Lys Tyr Asn Pro Tyr
 45 80 85 90
 47 Tyr Glu Asn Asn Arg Leu Gly Phe Ser Gly Ile Phe Gly Tyr Tyr
 48 95 100 105
 50 Tyr Asn Lys Asn Phe Arg Ile Glu Ser Glu Leu Ser Tyr Glu Thr
 51 110 115 120
 53 Phe His Ile Lys Asn Asn Gly Tyr Lys Arg Ile Asp Cys Glu Lys
 54 125 130 135
 56 His Phe Ala Leu Ala Lys Glu Ile Ser Gly Gly Ser Asn Asn Pro
 57 140 145 150
 59 Ala Asn Asn Lys Tyr Val Thr Leu Ile Asn Asn Gly Ile Ser Leu
 60 155 160 165
 62 Thr Ser Ala Leu Ile Asn Val Cys Tyr Asp Val Asp Gly Leu Lys
 63 170 175 180
 65 His Asn Ile Ile Thr Tyr Ser Cys Leu Gly Phe Gly Val Asp Thr
 66 185 190 195
 68 Ile Asp Phe Leu Ser Lys Tyr Thr Thr Lys Phe Ser Tyr Gln Gly
 69 200 205 210
 71 Lys Leu Gly Ala Ser Tyr Thr Val Ser Pro Gln Val Ser Val Phe

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,808

DATE: 05/27/2001

TIME: 16:38:42

Input Set : A:\Pto.amc

Output Set: C:\CRF3\05272001\I846808.raw

```

72          215          220          225
74 Ile Glu Gly Tyr Tyr His Gly Leu Phe Gly Lys Lys Phe Glu Lys
75          230          235          240
77 Ile Pro Val Asn Tyr Pro Cys Asp Tyr Pro Ser Pro Thr Pro Pro
78          245          250          255
80 Asn Ser Lys Pro His Val His Thr Thr Ala Leu Ala Met Leu Ser
81          260          265          270
83 Ile Gly Tyr Tyr Gly Gly Ser Ile Gly Ile Lys Phe Ile Leu
84          275          280
87 <210> SEQ ID NO: 2
88 <211> LENGTH: 297
89 <212> TYPE: PRT
90 <213> ORGANISM: Ehrlichia chaffeensis
92 <220> FEATURE:
93 <223> OTHER INFORMATION: P28-2 Outer Membrane Protein of
94   Ehrlichia chaffeensis
96 <400> SEQUENCE: 2
97 Met Ser Tyr Ala Lys Val Phe Ile Leu Ile Cys Leu Ile Leu Leu
98          5          10          15
100 Val Pro Ser Leu Ser Phe Ala Ile Val Asn Asn Asp Phe Leu Lys
101          20          25          30
103 Asp Asn Ile Gly His Phe Tyr Ile Gly Gly Gln Tyr Lys Pro Gly
104          35          40          45
106 Val Pro Arg Phe Asn Arg Phe Leu Val Thr Asn Asn Asn Ile Arg
107          50          55          60
109 Glu Leu Met Ser Ser Asp Glu Glu Cys Arg Ser Thr Ile Pro His
110          65          70          75
112 Met Val Gln Ser Val Ala Gln Gly Thr Leu Pro Pro Glu Ala Leu
113          80          85          90
115 Glu Glu Leu Ala Asp Gly Lys Phe Pro Glu Gly Tyr Leu Tyr Phe
116          95          100          105
118 Thr Ile Pro Tyr Asn Pro Thr Tyr Lys Lys Asn Leu Leu Gly Ala
119          110          115          120
121 Gly Gly Val Ile Gly Tyr Ser Thr Thr His Phe Arg Val Glu Val
122          125          130          135
124 Glu Ala Phe Tyr Asp Lys Phe Asn Leu Thr Ala Pro Ala Gly Tyr
125          140          145          150
127 Leu His Lys Asn Phe Tyr Glu Tyr Phe Ala Leu Ala Thr Thr Met
128          155          160          165
130 Asp Thr Lys His Pro His Gln Ser Ala Glu Asp Lys Tyr Tyr Tyr
131          170          175          180
133 Met Lys Asn Thr Gly Ile Thr Leu Ser Pro Phe Ile Ile Asn Ala
134          185          190          195
136 Cys Tyr Asp Phe Ile Leu Lys Lys Thr Arg Asn Val Ala Pro Tyr
137          200          205          210
139 Leu Cys Leu Gly Val Gly Gly Asn Phe Ile Asp Phe Leu Asp Gln
140          215          220          225
142 Val Ser Phe Lys Phe Ala Tyr Gln Ala Lys Val Gly Ile Ser Tyr
143          230          235          240

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,808

DATE: 05/27/2001

TIME: 16:38:42

Input Set : A:\Pto.amc

Output Set: C:\CRF3\05272001\I846808.raw

```

145 Phe Val Ser Pro Asn Ile Ala Phe Phe Ile Asp Gly Ser Phe His
146                               245                250                255
148 Gly His Leu Asn Asn Gln Phe Ser Asp Ser Pro Val Val Asp Tyr
149                               260                265                270
151 Ser Ser Ser Gly Phe Pro Thr Ile Ser Ala Lys Phe Asn Ala Asn
152                               275                280                285
154 Phe Leu Thr Ser Ser Ile Gly Ile Arg Phe Ile Ser
155                               290                295
157 <210> SEQ ID NO: 3
158 <211> LENGTH: 285
159 <212> TYPE: PRT
160 <213> ORGANISM: Ehrlichia chaffeensis
162 <220> FEATURE:
163 <223> OTHER INFORMATION: P28-3 Outer Membrane Protein of
164     Ehrlichia chaffeensis
166 <400> SEQUENCE: 3
167 Met Gln Lys Leu Tyr Ile Ser Phe Ile Ile Leu Ser Gly Leu Leu
168                               5                  10                  15
170 Leu Pro Lys Tyr Val Phe Cys Met His Gln Asn Asn Asn Ile Asp
171                               20                  25                  30
173 Gly Ser Tyr Val Thr Ile Lys Tyr Gln Leu Thr Thr Pro His Phe
174                               35                  40                  45
176 Lys Asn Phe Tyr Ile Lys Glu Thr Asp Phe Asp Thr Gln Glu Pro
177                               50                  55                  60
179 Ile Gly Leu Ala Lys Ile Thr Ala Asn Thr Lys Phe Asp Thr Leu
180                               65                  70                  75
182 Lys Glu Asn Phe Ser Phe Ser Pro Leu His Gln Thr Asp Ser Tyr
183                               80                  85                  90
185 Lys Ser Tyr Gln Asn Asp Leu Leu Gly Ile Gly Leu Ser Val Gly
186                               95                  100                 105
188 Leu Phe Val Lys Ser Phe Arg Ile Glu Phe Glu Gly Ala Tyr Lys
189                               110                 115                 120
191 Asn Phe Asn Thr Lys Arg Leu Ala Arg Tyr Lys Ser Lys Asp Gly
192                               125                 130                 135
194 Tyr Lys Tyr Phe Ala Ile Pro Arg Lys Ser Glu His Gly Phe Leu
195                               140                 145                 150
197 Asp Asn Thr Phe Gly Tyr Thr Val Ala Lys Asn Asn Gly Ile Ser
198                               155                 160                 165
200 Ile Ile Ser Asn Ile Ile Asn Leu Cys Ser Glu Thr Lys Tyr Lys
201                               170                 175                 180
203 Ser Phe Thr Pro Tyr Ile Cys Ile Gly Val Gly Gly Asp Phe Ile
204                               185                 190                 195
206 Glu Ile Phe Asp Val Met Arg Ile Lys Phe Ala Tyr Gln Gly Lys
207                               200                 205                 210
209 Val Gly Val Ser Tyr Pro Ile Thr Ser Lys Leu Ile Leu Ser Ile
210                               215                 220                 225
212 Asn Gly Gln Tyr His Lys Val Ile Gly Asn Lys Phe Glu Leu Leu
213                               230                 235                 240
215 Pro Val Tyr Gln Pro Val Glu Leu Lys Arg Leu Val Thr Asn Lys

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,808

DATE: 05/27/2001

TIME: 16:38:42

Input Set : A:\Pto.amc

Output Set: C:\CRF3\05272001\I846808.raw

```

216          245          250          255
218 Thr Ser Lys Asp Ile Asp Gln Asp Val Thr Ala Ser Leu Thr Leu
219          260          265          270
221 Asn Leu Glu His Phe Ser Ser Glu Ile Gly Leu Ser Phe Ile Phe
222          275          280          285
224 <210> SEQ ID NO: 4
225 <211> LENGTH: 272
226 <212> TYPE: PRT
227 <213> ORGANISM: Ehrlichia chaffeensis
229 <220> FEATURE:
230 <223> OTHER INFORMATION: P28-4 Outer Membrane Protein of
231     Ehrlichia chaffeensis
233 <400> SEQUENCE: 4
234 Met Tyr Met Tyr Asn Lys Lys His Tyr Cys Tyr Ile Val Thr Tyr
235          5          10          15
237 Val Ile Thr Leu Phe Phe Leu Leu Leu Pro Ile Glu Ser Leu Ser
238          20          25          30
240 Ala Leu Ile Gly Asn Val Glu Lys Asp Leu Lys Val Ser Ser Thr
241          35          40          45
243 Tyr Val Ser Ser Gln Tyr Lys Pro Ser Ile Phe His Phe Arg Asn
244          50          55          60
246 Phe Ser Ile Gln Glu Ser His Pro Lys Lys Ser Ser Glu Glu Phe
247          65          70          75
249 Lys Lys Ile Lys Ala Asn Leu Asn Asn Ile Leu Lys Ser Asn Ala
250          80          85          90
252 Tyr Asn Leu Gln Phe Gln Asp Asn Thr Thr Ser Phe Ser Gly Thr
253          95          100         105
255 Ile Gly Tyr Phe Ser Lys Gly Leu Arg Leu Glu Ala Glu Gly Cys
256          110         115         120
258 Tyr Gln Glu Phe Asn Val Lys Asn Ser Asn Asn Ser Leu Ile Ile
259          125         130         135
261 Ser Ser Asn Lys Tyr His Ser Arg Ile His Asp Glu Asn Tyr Ala
262          140         145         150
264 Ile Thr Thr Asn Asn Lys Leu Ser Ile Ala Ser Ile Met Val Asn
265          155         160         165
267 Thr Cys Tyr Asp Ile Ser Ile Asn Asn Thr Ser Ile Val Pro Tyr
268          170         175         180
270 Leu Cys Thr Gly Ile Gly Glu Asp Leu Val Gly Leu Phe Asn Thr
271          185         190         195
273 Ile His Phe Lys Leu Ala Tyr Gln Gly Lys Val Gly Met Ser Tyr
274          200         205         210
276 Leu Ile Asn Asn Asn Ile Leu Leu Phe Ser Asp Ile Tyr Tyr His
277          215         220         225
279 Lys Val Met Gly Asn Arg Phe Lys Asn Leu Tyr Met Gln Tyr Val
280          230         235         240
282 Ala Asp Pro Asn Ile Ser Glu Glu Thr Ile Pro Ile Leu Ala Lys
283          245         250         255
285 Leu Asp Ile Gly Tyr Phe Gly Ser Glu Ile Gly Ile Arg Phe Met
286          260         265         270

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,808

DATE: 05/27/2001

TIME: 16:38:42

Input Set : A:\Pto.amc

Output Set: C:\CRF3\05272001\I846808.raw

```

288 Phe Asn
290 <210> SEQ ID NO: 5
291 <211> LENGTH: 295
292 <212> TYPE: PRT
293 <213> ORGANISM: Ehrlichia chaffeensis
295 <220> FEATURE:
296 <223> OTHER INFORMATION: P28-5 Outer Membrane Protein of
297     Ehrlichia chaffeensis
299 <400> SEQUENCE: 5
301 Met Thr Lys Lys Phe Asn Phe Val Asn Val Ile Leu Thr Phe Leu
302                      5                      10                      15
304 Leu Phe Leu Phe Pro Leu Lys Ser Phe Thr Thr Tyr Ala Asn Asn
305                      20                      25                      30
307 Asn Thr Ile Thr Gln Lys Val Gly Leu Tyr Ile Ser Gly Gln Tyr
308                      35                      40                      45
310 Lys Pro Ser Ile Pro His Phe Lys Asn Phe Ser Val Glu Glu Asn
311                      50                      55                      60
313 Asp Lys Val Val Asp Leu Ile Gly Leu Thr Thr Asp Val Thr Tyr
314                      65                      70                      75
316 Ile Thr Glu His Ile Leu Arg Asp Asn Thr Lys Phe Asn Thr His
317                      80                      85                      90
319 Tyr Ile Ala Lys Phe Lys Asn Asn Phe Ile Asn Phe Ser Ser Ala
320                      95                      100                     105
322 Ile Gly Tyr Tyr Ser Gly Gln Gly Pro Arg Leu Glu Ile Glu Ser
323                      110                     115                     120
325 Ser Tyr Gly Asp Phe Asp Val Val Asn Tyr Lys Asn Tyr Ala Val
326                      125                     130                     135
328 Gln Asp Val Asn Arg Tyr Phe Ala Leu Val Arg Glu Lys Asn Gly
329                      140                     145                     150
331 Ser Asn Phe Ser Pro Lys Pro His Glu Thr Ser Gln Pro Ser Asp
332                      155                     160                     165
334 Ser Asn Pro Lys Lys Ser Phe Tyr Thr Leu Met Lys Asn Asn Gly
335                      170                     175                     180
337 Val Phe Val Ala Ser Val Ile Ile Asn Gly Cys Tyr Asp Phe Ser
338                      185                     190                     195
340 Phe Asn Asn Thr Thr Ile Ser Pro Tyr Val Cys Ile Gly Val Gly
341                      200                     205                     210
343 Gly Asp Phe Ile Glu Phe Phe Glu Val Met His Ile Lys Phe Ala
344                      215                     220                     225
346 Cys Gln Ser Lys Val Gly Ile Ser Tyr Pro Ile Ser Pro Ser Ile
347                      230                     235                     240
349 Thr Ile Phe Ala Asp Ala His Tyr His Lys Val Ile Asn Asn Lys
350                      245                     250                     255
352 Phe Asn Asn Leu His Val Lys Tyr Ser Tyr Glu Leu Lys Asn Ser
353                      260                     265                     270
355 Pro Thr Ile Thr Ser Ala Thr Ala Lys Leu Asn Ile Glu Tyr Phe
356                      275                     280                     285
358 Gly Gly Glu Val Gly Met Arg Phe Ile Phe
359                      290                     295

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/846,808

DATE: 05/27/2001

TIME: 16:38:43

Input Set : A:\Pto.amc

Output Set: C:\CRF3\05272001\I846808.raw

L:11 M:282 W: Numeric Field Identifier Missing, <140> CURRENT APPLICATION NUMBER: is Added.
L:1460 M:283 W: Missing Blank Line separator, <220> field identifier
L:1463 M:283 W: Missing Blank Line separator, <400> field identifier
L:1470 M:283 W: Missing Blank Line separator, <220> field identifier
L:1473 M:283 W: Missing Blank Line separator, <400> field identifier
L:1480 M:283 W: Missing Blank Line separator, <220> field identifier
L:1483 M:283 W: Missing Blank Line separator, <400> field identifier
L:1491 M:283 W: Missing Blank Line separator, <220> field identifier
L:1494 M:283 W: Missing Blank Line separator, <400> field identifier
L:1501 M:283 W: Missing Blank Line separator, <220> field identifier
L:1504 M:283 W: Missing Blank Line separator, <400> field identifier
L:1511 M:283 W: Missing Blank Line separator, <220> field identifier
L:1514 M:283 W: Missing Blank Line separator, <400> field identifier
L:1522 M:283 W: Missing Blank Line separator, <220> field identifier
L:1525 M:283 W: Missing Blank Line separator, <400> field identifier
L:1532 M:283 W: Missing Blank Line separator, <220> field identifier
L:1535 M:283 W: Missing Blank Line separator, <400> field identifier
L:1542 M:283 W: Missing Blank Line separator, <220> field identifier
L:1545 M:283 W: Missing Blank Line separator, <400> field identifier
L:1553 M:283 W: Missing Blank Line separator, <220> field identifier
L:1556 M:283 W: Missing Blank Line separator, <400> field identifier
L:1563 M:283 W: Missing Blank Line separator, <220> field identifier
L:1566 M:283 W: Missing Blank Line separator, <400> field identifier
L:1573 M:283 W: Missing Blank Line separator, <220> field identifier
L:1576 M:283 W: Missing Blank Line separator, <400> field identifier
L:1584 M:283 W: Missing Blank Line separator, <220> field identifier
L:1587 M:283 W: Missing Blank Line separator, <400> field identifier
L:1594 M:283 W: Missing Blank Line separator, <220> field identifier
L:1597 M:283 W: Missing Blank Line separator, <400> field identifier
L:1604 M:283 W: Missing Blank Line separator, <220> field identifier
L:1607 M:283 W: Missing Blank Line separator, <400> field identifier
L:1615 M:283 W: Missing Blank Line separator, <220> field identifier
L:1618 M:283 W: Missing Blank Line separator, <400> field identifier
L:1625 M:283 W: Missing Blank Line separator, <220> field identifier
L:1628 M:283 W: Missing Blank Line separator, <400> field identifier
L:1635 M:283 W: Missing Blank Line separator, <220> field identifier
L:1638 M:283 W: Missing Blank Line separator, <400> field identifier
L:1646 M:283 W: Missing Blank Line separator, <220> field identifier
L:1657 M:283 W: Missing Blank Line separator, <220> field identifier
L:1660 M:283 W: Missing Blank Line separator, <400> field identifier
L:1667 M:283 W: Missing Blank Line separator, <220> field identifier
L:1670 M:283 W: Missing Blank Line separator, <400> field identifier
L:1677 M:283 W: Missing Blank Line separator, <220> field identifier
L:1680 M:283 W: Missing Blank Line separator, <400> field identifier
L:1688 M:283 W: Missing Blank Line separator, <220> field identifier
L:1691 M:283 W: Missing Blank Line separator, <400> field identifier
L:1698 M:283 W: Missing Blank Line separator, <220> field identifier
L:1701 M:283 W: Missing Blank Line separator, <400> field identifier

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/846,808

DATE: 05/27/2001

TIME: 16:38:43

Input Set : A:\Pto.amc

Output Set: C:\CRF3\05272001\I846808.raw

L:1708 M:283 W: Missing Blank Line separator, <220> field identifier
L:1711 M:283 W: Missing Blank Line separator, <400> field identifier
L:1722 M:283 W: Missing Blank Line separator, <400> field identifier
L:1729 M:283 W: Missing Blank Line separator, <220> field identifier
L:1732 M:283 W: Missing Blank Line separator, <400> field identifier
L:1739 M:283 W: Missing Blank Line separator, <220> field identifier
L:1742 M:283 W: Missing Blank Line separator, <400> field identifier
L:1749 M:283 W: Missing Blank Line separator, <220> field identifier
L:1752 M:283 W: Missing Blank Line separator, <400> field identifier
L:1759 M:283 W: Missing Blank Line separator, <220> field identifier
L:1762 M:283 W: Missing Blank Line separator, <400> field identifier
L:1770 M:283 W: Missing Blank Line separator, <220> field identifier
L:1773 M:283 W: Missing Blank Line separator, <400> field identifier
L:1780 M:283 W: Missing Blank Line separator, <220> field identifier
L:1783 M:283 W: Missing Blank Line separator, <400> field identifier

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,808

DATE: 05/16/2001

TIME: 15:37:17

Input Set : A:\6311SEQ.txt

Output Set: N:\CRF3\05162001\I846808.raw

**Does Not Comply
Corrected Diskette Needed**

3 <110> APPLICANT: Walker, David H.
 4 Yu, Xu-Jie
 6 <120> TITLE OF INVENTION: Ehrlichia chaffeensis 28 kDa Outer Membrane
 7 Protein Multigene Family
 9 <130> FILE REFERENCE: D6311
 W--> 11 <140> CURRENT APPLICATION NUMBER: US/09/846,808
 11 <141> CURRENT FILING DATE: 2001-05-01
 13 <150> PRIOR APPLICATION NUMBER: 60/201,035
 14 <151> PRIOR FILING DATE: 2000-05-01
 16 <160> NUMBER OF SEQ ID NOS: 53

ERRORED SEQUENCES

428 <210> SEQ ID NO: 7
 429 <211> LENGTH: 283
 430 <212> TYPE: PRT
 431 <213> ORGANISM: Ehrlichia chaffeensis
 433 <220> FEATURE:
 434 <223> OTHER INFORMATION: P28-7 Outer Membrane Protein of
 435 Ehrlichia chaffeensis
 437 <400> SEQUENCE: 7
 438 Met Ser Ala Lys Lys Lys Leu Phe Ile Ile Gly Ser Val Leu Val
 439 5 10 15
 441 Cys Leu Val Ser Tyr Leu Pro Thr Lys Ser Leu Ser Asn Leu Asn
 442 20 25 30
 444 Asn Ile Asn Asn Asn Thr Lys Cys Thr Gly Leu Tyr Val Ser Gly
 445 35 40 45
 447 Gln Tyr Lys Pro Thr Val Ser His Phe Ser Asn Phe Ser Leu Lys
 448 50 55 60
 450 Glu Thr Tyr Thr Asp Thr Lys Glu Leu Leu Gly Leu Ala Lys Asp
 451 65 70 75
 453 Ile Lys Ser Ile Thr Asp Ile Thr Thr Asn Lys Lys Phe Asn Ile
 454 80 85 90
 456 Pro Tyr Asn Thr Lys Phe Gln Asp Asn Ala Val Ser Phe Ser Ala
 457 95 100 105
 459 Ala Val Gly Tyr Ile Ser Gln Asp Ser Pro Arg Val Glu Val Glu
 460 110 115 120
 462 Trp Ser Tyr Glu Glu Phe Asp Val Lys Asn Pro Gly Asn Tyr Val
 463 125 130 135
 465 Val Ser Glu Ala Phe Arg Tyr Ile Ala Leu Ala Arg Gly Ile Asp
 466 140 145 150
 468 Asn Leu Gln Lys Tyr Pro Glu Thr Asn Lys Tyr Val Val Ile Lys
 469 155 160 165
 471 Asn Asn Gly Leu Ser Val Ala Ser Ile Ile Ile Asn Gly Cys Tyr
 472 170 175 180
 474 Asp Phe Ser Leu Asn Asn Leu Lys Val Ser Pro Tyr Ile Cys Val

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/846,808

DATE: 05/16/2001

TIME: 15:37:17

Input Set : A:\6311SEQ.txt

Output Set: N:\CRF3\05162001\I846808.raw

```

475          185          190          195
477 Gly Phe Gly Gly Asp Ile Ile Glu Phe Phe Ser Ala Val Ser Phe
E--> 478-200- 200 205 205 210 210 ←
480 Lys Phe Ala Tyr Gln Gly Lys Val Gly Ile Ser Tyr Pro Leu Phe
481          215          220          225
483 Ser Asn Met Ile Ile Phe Ala Asp Gly Tyr Tyr His Lys Val Ile
484          230          235          240
486 Gly Asn Lys Phe Asn Asn Leu Asn Val Gln His Val Val Ser Leu
487          245          250          255
489 Asn Ser His Pro Lys Ser Thr Phe Ala Val Ala Thr Leu Asn Val
490          260          265          270
492 Glu Tyr Phe Gly Ser Glu Phe Gly Leu Lys Phe Ile Phe
493          275          280

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/846,808

DATE: 05/16/2001

TIME: 15:37:18

Input Set : A:\6311SEQ.txt

Output Set: N:\CRF3\05162001\I846808.raw

L:11 M:282 W: Numeric Field Identifier Missing, <140> CURRENT APPLICATION NUMBER: is Added.
L:478 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:7
L:1460 M:283 W: Missing Blank Line separator, <220> field identifier
L:1463 M:283 W: Missing Blank Line separator, <400> field identifier
L:1470 M:283 W: Missing Blank Line separator, <220> field identifier
L:1473 M:283 W: Missing Blank Line separator, <400> field identifier
L:1480 M:283 W: Missing Blank Line separator, <220> field identifier
L:1483 M:283 W: Missing Blank Line separator, <400> field identifier
L:1491 M:283 W: Missing Blank Line separator, <220> field identifier
L:1494 M:283 W: Missing Blank Line separator, <400> field identifier
L:1501 M:283 W: Missing Blank Line separator, <220> field identifier
L:1504 M:283 W: Missing Blank Line separator, <400> field identifier
L:1511 M:283 W: Missing Blank Line separator, <220> field identifier
L:1514 M:283 W: Missing Blank Line separator, <400> field identifier
L:1522 M:283 W: Missing Blank Line separator, <220> field identifier
L:1525 M:283 W: Missing Blank Line separator, <400> field identifier
L:1532 M:283 W: Missing Blank Line separator, <220> field identifier
L:1535 M:283 W: Missing Blank Line separator, <400> field identifier
L:1542 M:283 W: Missing Blank Line separator, <220> field identifier
L:1545 M:283 W: Missing Blank Line separator, <400> field identifier
L:1553 M:283 W: Missing Blank Line separator, <220> field identifier
L:1556 M:283 W: Missing Blank Line separator, <400> field identifier
L:1563 M:283 W: Missing Blank Line separator, <220> field identifier
L:1566 M:283 W: Missing Blank Line separator, <400> field identifier
L:1573 M:283 W: Missing Blank Line separator, <220> field identifier
L:1576 M:283 W: Missing Blank Line separator, <400> field identifier
L:1584 M:283 W: Missing Blank Line separator, <220> field identifier
L:1587 M:283 W: Missing Blank Line separator, <400> field identifier
L:1594 M:283 W: Missing Blank Line separator, <220> field identifier
L:1597 M:283 W: Missing Blank Line separator, <400> field identifier
L:1604 M:283 W: Missing Blank Line separator, <220> field identifier
L:1607 M:283 W: Missing Blank Line separator, <400> field identifier
L:1615 M:283 W: Missing Blank Line separator, <220> field identifier
L:1618 M:283 W: Missing Blank Line separator, <400> field identifier
L:1625 M:283 W: Missing Blank Line separator, <220> field identifier
L:1628 M:283 W: Missing Blank Line separator, <400> field identifier
L:1635 M:283 W: Missing Blank Line separator, <220> field identifier
L:1638 M:283 W: Missing Blank Line separator, <400> field identifier
L:1646 M:283 W: Missing Blank Line separator, <220> field identifier
L:1657 M:283 W: Missing Blank Line separator, <220> field identifier
L:1660 M:283 W: Missing Blank Line separator, <400> field identifier
L:1667 M:283 W: Missing Blank Line separator, <220> field identifier
L:1670 M:283 W: Missing Blank Line separator, <400> field identifier
L:1677 M:283 W: Missing Blank Line separator, <220> field identifier
L:1680 M:283 W: Missing Blank Line separator, <400> field identifier
L:1688 M:283 W: Missing Blank Line separator, <220> field identifier
L:1691 M:283 W: Missing Blank Line separator, <400> field identifier
L:1698 M:283 W: Missing Blank Line separator, <220> field identifier

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/846,808

DATE: 05/16/2001

TIME: 15:37:18

Input Set : A:\6311SEQ.txt

Output Set: N:\CRF3\05162001\I846808.raw

L:1701 M:283 W: Missing Blank Line separator, <400> field identifier
L:1708 M:283 W: Missing Blank Line separator, <220> field identifier
L:1711 M:283 W: Missing Blank Line separator, <400> field identifier
L:1722 M:283 W: Missing Blank Line separator, <400> field identifier